



Syllabus

Subject

Subject / Group	11237 - Applying Biotechnology to Pest Diagnosis and Control / 1
Degree	Master's in Applied Biotechnology
Credits	5
Period	2nd semester
Language of instruction	English

Professors

Lecturers	Office hours for students					
	Starting time	Finishing time	Day	Start date	End date	Office / Building
Claudia Caterina Paredes						
Esquivel						
<i>(Responsible)</i>						
claudia.paredes@uib.es						

You need to book a date with the professor in order to attend a tutoring session.

Context

Nowadays, parasitic diseases cause a high mortality in humans, with diseases like malaria affecting millions of people worldwide. Many of the diseases caused by parasites are considered emerging or reemerging due to globalization and climate change. The field of parasitology has been revolutionized by the arrival of modern techniques, increasing our understanding on behaviour, distribution, diagnosis, evolution and control of parasitic organisms and their hosts. This course will cover these aspects from protozoan to metazoan parasites of human and veterinary importance.

Requirements

Essential

An advanced level in English language is highly recommended

Recommended

Previous knowledge on Zoology and Parasitology is also recommended, although not compulsory

Skills





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Specific

- * - Learn basic concepts on biotechnology and its utility in Parasitology .
- * - Make a critical analysis of scientific studies of this field of research .
- * - Know the gaps and the future trends in the field of Parasitology .

Generic

- * - Understand scientific literature related to the course .

Transversal

- * -Give a scientific presentation in the field of parasitology .

Basic

- * You may consult the basic competencies students will have to achieve by the end of the Master's degree at the following address: http://estudis.uib.cat/master/comp_basiques/

Content

This course includes the following topics:

Range of topics

- I. Review of basic concepts
Basics concepts on epidemiology and biology of parasites and its vectors
- II. Diagnostic Parasitology I. Phylogenetics
Molecular-based techniques to identify parasites and vectors. Application of phylogenetics concepts.
- III. Diagnostic parasitology II. Genomics
Parasitology in the era of genomics
- IV. Host-parasite interactions
Current knowledge in parasites and its interaction with their hosts.
Changes in behaviour of parasitized hosts
- V. Vector control
Genetic manipulation of vectors, insecticide resistance mechanisms
- VI. Population genetics of parasites and vectors
Current trends, importance of applying evolutionary biology concepts in the understanding of parasitic diseases

Teaching methodology

In-class work activities (1.2 credits, 30 hours)



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Modality	Name	Typ. Grp.	Description	Hours
Theory classes	Basic concepts in Parasitology	Large group (G)	Review of the basic concepts on this field of research	10
Seminars and workshops	Analysis of the scientific literature	Medium group (M)	Analysis of the scientific literature. A review of the high impact articles in Parasitology. State of the art of the different topics	12
Laboratory classes	Diagnostic parasitology	Medium group (M)	Morphological diagnosis of the most important parasitic diseases in the laboratory	8

At the beginning of the semester a schedule of the subject will be made available to students through the UIBdigital platform. The schedule shall at least include the dates when the continuing assessment tests will be conducted and the hand-in dates for the assignments. In addition, the lecturer shall inform students as to whether the subject work plan will be carried out through the schedule or through another way included in the Aula Digital platform.

Distance education tasks (3.8 credits, 95 hours)

Modality	Name	Description	Hours
Individual self-study	Analysis of the scientific literature II	The students should give an oral presentation of a particular topic defined at the beginning of the course	40
Individual self-study		The students should present a written work on a particular topic	55

Specific risks and protective measures

All material used during practicals is safe

Student learning assessment

Frau en elements d'avaluació

In accordance with article 33 of Academic regulations, "regardless of the disciplinary procedure that may be followed against the offending student, the demonstrably fraudulent performance of any of the evaluation elements included in the teaching guides of the subjects will lead, at the discretion of the teacher, a undervaluation in the qualification that may involve the qualification of "suspense 0" in the annual evaluation of the subject".

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Basic concepts in Parasitology

Modality	Theory classes
Technique	Objective tests (retrievable)
Description	Review of the basic concepts on this field of research
Assessment criteria	Written exam of the different concepts reviewed during class. The lecturer will provided a list of selected topics.

Final grade percentage: 15%with a minimum grade of 5

Diagnostic parasitology

Modality	Laboratory classes
Technique	Short-answer tests (retrievable)
Description	Morphological diagnosis of the most important parasitic diseases in the laboratory
Assessment criteria	Diagnostic parasitology under the microscope

Final grade percentage: 15%with a minimum grade of 4

Analysis of the scientific literature II

Modality	Individual self-study
Technique	Oral tests (non-retrievable)
Description	The students should give an oral presentation of a particular topic defined at the beginning of the course
Assessment criteria	Oral presentation during classes

Final grade percentage: 40%

Individual self-study

Modality	Individual self-study
Technique	Papers and projects (non-retrievable)
Description	The students should present a written work on a particular topic
Assessment criteria	Scientific abstract and written work on a particular topic

Final grade percentage: 30%

Resources, bibliography and additional documentation

Basic bibliography

MOLINEUX, DAVID. 2007. Control of Human Parasitic Diseases. Academic Press. London
SCHMID-HEMPEL, PAUL (Review by: Andrea L. Graham). 2012Evolutionary Parasitology: The Integrated Study of Infections, Immunology, Ecology, and Genetics.The University of Chicago Press

Complementary bibliography

- Molecular parasitology: protozoan parasites and their molecules. Author(s) : Walochnik, J.;Duchêne, M. 2016
- Insect Molecular Genetics. Marjorie A. Hoy. 2013





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Academic year	2018-19
Subject	11237 - Applying Biotechnology to Pest Diagnosis and Control
Group	Group 1

- Atlas of Tropical Medicine and Parasitology (Text with CD-ROM). 6th Edition. WALLACE, PETER.2007.

